

C. Claims

The present Amendment has been prepared in accordance with a revised format established by the U.S. Patent and Trademark Office as set forth in the O.G. Notice 1267 Off. Gaz. Pat. Office 106 of February 25, 2003.

Please cancel claim 10 without prejudice or disclaimer and amend claims 1-9 and 11 as follows. In accordance with the revised amendment format, a complete listing of all the claims appears below; this listing replaces all earlier amendments and listings of the claims.

1. (Currently Amended) A method of manufacturing an optical element comprising at least a plurality of pixels formed on a substrate and partition walls arranged respectively between adjacent pixels, said method comprising the steps of:

forming partition walls of a resin composition on a substrate;

performing a dry etching process ~~of~~ by irradiating the substrate carrying said partition walls formed thereon with plasma in an atmosphere containing a gas selected ~~at least~~ from the group consisting of oxygen, argon and helium;

performing a plasma treatment process ~~of~~ by irradiating the substrate subjected to said dry etching process with plasma in an atmosphere containing at least fluorine atoms; and

forming pixels by applying ink to the areas ~~surrounding~~ surrounded by the partition walls by means of an ink-jet system.

2. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 1, wherein ~~the~~ a surface coarseness of the partition walls is greater after said plasma treatment process than before said dry etching process.

3. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 1, wherein said partition walls are formed from a resin composition containing carbon black.

4. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 3, wherein ~~the~~ an arithmetic mean deviation (Ra) of ~~the~~ a surface of the partition walls after said plasma treatment is between 3nm and 50nm.

5. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 3, wherein ~~the~~ a contact angle of ~~the~~ a surface of the partition walls relative to pure water is not smaller than 110° and that of ~~the~~ a surface of the substrate relative to pure water is not greater than 20° after said plasma treatment process.

6. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 1, wherein ~~the~~ a gas introduced in said plasma treatment process is at least a halogen gas selected from the group consisting of CF_4 , SF_6 , CHF_3 , C_2F_6 , C_3F_8 and C_5F_8 .

7. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 1, wherein ~~the~~ a gas introduced in said plasma treatment process is at least a ~~mixture~~ mixture of a halogen gas selected from the group consisting of CF₄, SF₆, CHF₃, C₂F₆, C₃F₈ and C₅F₈ and O₂ gas and wherein the ~~mixing ratio~~ amount of O₂ gas in the mixture is not greater than 30%.

8. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 1, wherein said ink contains at least a setting ingredient, water and an organic solvent.

9. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 1, wherein said method is adapted to manufacture a color filter where said substrate is a transparent substrate and said partition walls are provided by a black matrix.

10. (Cancelled)

11. (Currently Amended) ~~A~~ The method of manufacturing an optical element according to claim 1, wherein after said plasma treatment process ~~for irradiating said dry-etched substrate with plasma~~, the plasma-treated substrate is subjected to a water treatment process.